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"TURN YOUR CELL PHONES ON"

Mobile phone polling as a tool for teaching information literacy

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ABSTRACT

While mobile technologies are ubiquitous among students and increasingly used in many aspects of libraries, they have yet to gain traction in information literacy instruction. Librarians at Champlain College piloted mobile phone polling in a first-year classroom as a less expensive and more versatile alternative to clickers. By utilizing a technology that virtually all students have in their pockets, librarians found that it increased engagement from previous iterations of the session. In addition, by asking poll questions about students' experiences, librarians were able to facilitate in-depth inquiry into information literacy topics. Ultimately, from direct experience in over 30 different classes, we found that mobile phone polling is a useful tool for any librarian to have in their pedagogical toolbox.

INTRODUCTION

Teaching first-year college students is both a considerable challenge and a tremendous opportunity. First-year students bring a variety of previous educational experiences as well as a wide range of expectations and preconceived notions of libraries and librarians. They are on different levels in terms of knowledge about information literacy concepts. Students' first information literacy instruction sessions are opportunites for librarians to get to know students and learn about what they bring to the classroom. This first interaction also creates an impression, either positive or negative, in the mind of the student that colors subsequent interactions with librarians and library instruction.

This article presents a case study of a project in which librarians at Champlain College used mobile phone polling in the classroom as part of an information literacy session. This case study will include the planning, implementation and results of the session. In addition, it will address the benefits, as well as possible challenges of using mobile phone technology based on the Teaching Librarians' experience in over 30 classrooms. (Teaching Librarians is capitalized because this is a formal designation for this group of librarians at Champlain College). Ultimately the authors conclude that mobile phone polling is an excellent alternative to clickers. It's a dynamic, easy-to-use pedagogical tool that can engage this generation of students and can be used as a jumping off point into deeper inquiry around information literacy concepts and skills.

LITERATURE REVIEW

Anyone who has spent time in the classroom knows that today's college freshmen are a generation that communicates primarily through their mobile phones, more specifically through the use of text messaging. According to the Pew Center, 77% of 17 year olds talk with their friends by text daily. The next closest means of communicating with their friends was calling on a cell phone at 60% and talking face to face at 33% (Lenhart, et al, 2010). In addition, the Pew Center recently found that 96% of undergraduates at four year colleges and 94% of community college students own a cell phone (Smith, et al, 2011). How are libraries capitalizing on the increasing pervasiveness of mobile phones, particularly in terms of instruction and learning?

General use of Mobile Phones in Libraries

The ubiquity of mobile technologies has been on the radar for libraries as an opportunity for some time. In 2005, Wagner pointed out that "whether we like it or not, whether we are ready for it or not, mobile learning represents the next step in a long tradition of technology-mediated learning. It will feature new strategies, practices, tools, applications, and resources to realize the promise of ubiquitous, pervasive, personal, and connected learning" (Wagner, 2005). Despite indicators of this trend, in 2008, the quantity of research on the use of text messaging in libraries was lacking (Profit, 2008). Our most recent search three years later found that this is still the case. Two exceptions are Murray's comprehensive article (2010) reviewing mobile technology and mobile initiatives in libraries, and Luo's recent article (2011) highlighting characteristics and best practices for text reference.

Early adopters to using cell phones in library services, like Hill (2007) and Profit (2008), focus primarily on reference

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services and describe implementation and challenges surrounding "Text a Librarian" services as part of reference. While there was initial excitement over these services, librarians have wondered how to handle questions that do not seem appropriate to text messaging and students' comfort levels with using their cell phones for library purposes. Hill, et al (2007) describes increases in questions asked via texting, but also point out "there have been instances of more complete reference/research questions that did not lend themselves to the technology" (p. 25). Luo's 2011 article highlights that the majority of text reference questions remain ready-reference and do not require a librarian. When it comes to reference, it seems that there are "more robust forms of communication that are better suited for the college-level research question." (Hill et al, 2007, p. 26). While librarians continue to look for creative applications of mobile technologies, they also continue to struggle to implement uses for cell phones in library services that are as essential as cell phones themselves.

Automated Response Systems, or "Clickers" in Instruction

While the potential for text messaging in instruction remains largely unexplored, there has been extensive experimentation, research, and shared experiences in using technology in library instruction via automated response systems, better known as "clickers". Kay and LeSage's authoritative review of literature on clickers (2009) demonstrates the breadth of literature on this technology and offers readers a full perspective of the issues involved. Hoffman and Godwin's seminal article on clickers (2006) not only describes the technology but also offers pedagogical techniques for implementing them into library instruction sessions. Their study, like many others (Keogh and Wang, 2010; Connor, 2008; Dill, 2008; Matesic and Adams, 2008; Hoffman, 2007) suggests that clickers offer potential for more interactive, student-centered instruction (Hoffman and Godwin, 2006, p. 432).

As is the case with using any technology in the classroom, there are challenges and obstacles in implementation. Despite its long history in the classroom, this is true for clickers as well. While Connor supports using clickers in the classroom, she points out several drawbacks some of which are technological (Connor, 2008, p. 25). In Keogh and Wang's experience the initial cost of clickers resulted in students' resentment and resistance to the technology while the set up time was a concern for faculty (Keogh and Wang, 2010, p. 13).

While it is important to be mindful of these logistical issues, one of the central questions raised by many articles is whether clickers aid in student learning. Dill's excellent discussion of this question suggests that in terms of value to student learning, the data is inconclusive (Dill, 2008, p. 529). However, Dill makes clear that the value greatly depends on how clickers are integrated into instruction (p. 529). Librarians agree that there is great potential in using clickers. While that brings initial excitement, there is an important drawback to using clickers in order to improve student learning, namely the challenge of "incorporating them effectively and seamlessly into learning activities" (Connor, 2008, p. 25). One popular example is the use of clickers in lectures where they can "restart" students' attention and improve their ability to remember content (Hoffman, 2008, p. 265-6). For the authors, however, our goal was not to increase retention of content but rather, to learn something about students' pre-existing search habits and information preferences in order to engage

them in a conversation or "inquiry" around their situational needs and evaluative criteria within the broader information landscape. From our perspective, moving away from a library-mandated or supplied technology to one that students carry in their pocket would open the door to a more free-flowing conversation.

Why Go Mobile?

Using cell phones in instruction relieves librarians of logistical considerations such as the need to purchase, distribute, and collect clickers at the end of the sessions (Keogh & Wang, 2009, p. 13). Students need only reach into their pockets to participate (Cheung, 2008, p. 52; Reimers and Stewart, 2009, p. 675). While concerns over polling software freezing during a class session (Reimers and Stewart, 2009, p. 679) or concerns over the wide variety of mobile devices (Godwin, 2009, p. 92) are important to consider, most of these issues are mitigated by relying on mobile polling software such as Poll Everywhere (Graham, 2010; Sellar, 2010). This web-based software also alleviates the need for extensive preparation to familiarize oneself with the auto-response software and its setup. Poll Everywhere only requires an internet connection, writing a set of poll questions, and clearing the responses if you want to ask the same question to more than one section of a course. The simplicity of setup and execution is, as Sellar says in her review of the software, "one of the product's best assets" (Sellar, 2010, p. 59).

While setting up and using this software is easy, deploying it in a meaningful way in the classroom requires more thought. Early pioneers in using cell phones in instruction like Cheung (2008) and Reimers and Stewart (2009) found increased student engagement and participation in their economics and psychology classes. Throughout the literature on clickers, there seems to be an understanding that clickers are good for increasing student interaction, engaging different learning styles, and gauging student comprehension and retention (Keogh and Wang, 2010; Kay and LeSage, 2009; Chalmers, 2008; Connor, 2008; Matesic and Adams, 2008). However, the authors were surprised that more librarians weren't using clickers or mobile polling for inquiry-based questions despite the trend in higher education and librarianship towards active learning (Boyd-Byrnes and McDermott, 2006, p. 15). Kay and LeSage identify "developing questions" as one of the "demanding tasks" or challenges of using clickers (2009, p. 824). Matesic and Adams indicate their use of inquiry-based questions about students' search methodologies was a successful part of the use of clickers in the classroom:. interestingly, they did not elaborate on this finding in their article (2008, p. 4). As with clickers, using cell phones in the classroom means that the design of sessions is more "front-loaded, in that it takes more before-class planning time than the traditional lecture" (Chalmers, 2008, p. 33). Is this additional planning time worth it?

Students using their own technology as a springboard to discussion and interaction in the classroom offers increased potential for an essential pedagogical component to student learning, particularly when dealing with first-year students—authenticity (Chalmers, 2007, p. 26; Palmer, 1998). Students are no longer answering questions that have a right or wrong answer. Instead, they are sharing their opinions which, as Keogh and Wang found, is "something students normally avoid, but which can lead to discussion based on responses" (2010, p. 12). This, in our view, leads to an opportunity to achieve what Maybee calls for in his powerful argument for relational

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information literacy instruction, "To enhance student information literacy, educators should be attempting to guide learners to conceptualize information use in a variety of ways, which learners could then use to address their various information needs" (Maybee, 2006, p. 84).

Piloting Mobile Phone Polling in the Classroom: A Case Study at Champlain College

In the course of reviewing and preparing for the first-year students' first information literacy sessions, Champlain College's Teaching Librarians discussed ways to incorporate technology into their teaching. Clickers were not feasible for two reasons. First, given the number of classes taught simultaneously (31 sections over a two week period), multiple bundles of clickers would be required ,which was not possible due to budget constraints. Second, a dedicated teaching space did not exist where the clicker response receiver could be housed. Something more portable and dynamic was required given the number of concurrent sessions taking place in different classrooms across campus. The librarians also felt varying levels of technological comfort, so it was vital that the technology be easy to use.

The free version of Poll Everywhere was utilized in the pilot project. This did present some unexpected limitations. After the creation of the initial Poll Everywhere it was discovered that there was a limit to the number of responses allowed for each poll. Therefore, there could not be multiple sections of our first-year classes responding to the same poll. 93 individual polls needed to be created; three apiece for each of the 31 sections of the class. These polls were then downloaded into 31 separate PowerPoint presentations and distributed among the four librarians who would be teaching these sections. The process of creating, copying and downloading, and turning on all the polls was completed by two of the librarians who were most comfortable with Poll Everywhere. There were several advantages to this. First, it allowed librarians who were less familiar with the technology to concentrate solely on teaching instead of having to worry about correctly setting up their polls. Second, it allowed for consistency across the sections. Instead of having four or five librarians creating polls their own way, two librarians agreed to language and formatting. The only disadvantage was that creating and managing the polls took a significant amount of work for the two librarians due to the scale of the project.

Because this was a technology new to the Teaching Librarians, they agreed to revert to more traditional polling techniques as a backup plan in case the software failed. This plan included students raising their hands, writing answers on the board, and "thumb polls". The first couple of sessions involved some technical difficulties where the polling did not work correctly, but after checking that the correct PowerPoint slides were downloaded to the correct session and double checking that all the polls were turned on, the remaining sessions all worked as planned.

Librarians began each session with general introductions and explained to students the class would not be library focused but information focused, specifically dealing with the way students use and interact with information. Polling was then introduced as a way to get students to start inquiring into their information habits and preferences. Librarians asked three questions (see figures

1-3) about students' information habits including: "where do you like to get information," "how do you search," and "how do you share information?" These questions allowed librarians to better understand students and students to better understand themselves. This activity set the stage for the rest of the class-- a discussion about student awareness of personalized searching on the internet and the importance of a balanced information diet in the context of the habits that students already identified.

The positive response to the polling by students was overwhelming. Comments ranged from "Well this is different," to, "That's so cool," to asking their professor, "Can we do more of these in class?" Librarians were thrilled with the level of participation in discussion following poll questions, and students enjoyed being able to use their own mobile phones to interact with the lesson. All the librarians agreed that it was hard to pull students away from talking in order to progress through the rest of the lesson plan. The librarians also agreed that the polling software genuinely fostered a spirit of inquiry in the sessions that had been difficult to establish previously due to a lack of familiarity with the students or lack of awareness of the class dynamic.

Using this technology was not an add-on or simply for "wow" factor. Rather, it was a deliberate pedagogical choice. Librarians purposefully asked students to respond to the poll questions in terms of their everyday lives rather than focusing on how students perform academic research. The use of the software and the questions asked created an environment where students felt comfortable sharing their opinions and offered librarians the chance to learn more about students' pre-existing search habits and preferences. This information acted as a gateway to inquiry. After articulating their habits through the polls, students were asked to deconstruct these habits and thereby recognize the situational nature of information literacy. For example, students quickly articulated a preference for Google when searching (see figure 2 above), but when asked why they preferred Google,

FIGURE 1 — WHERE DO YOU LIKE TO GET YOUR INFORMATION?

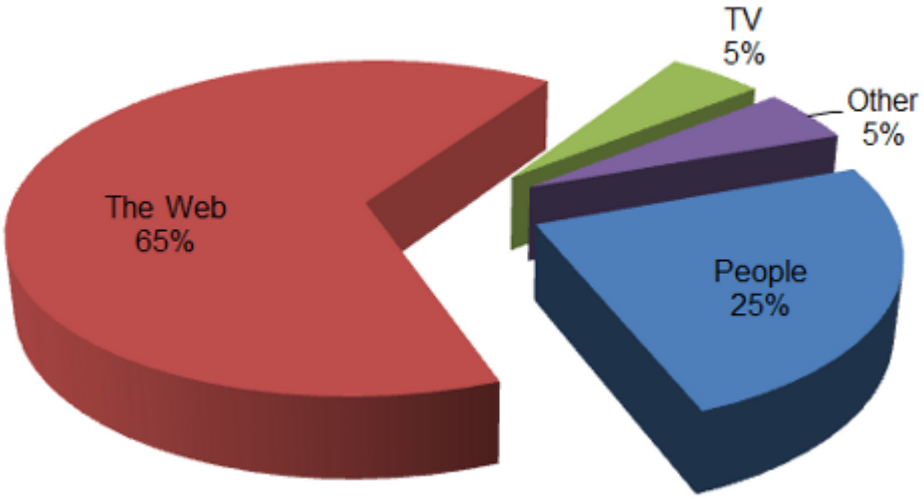

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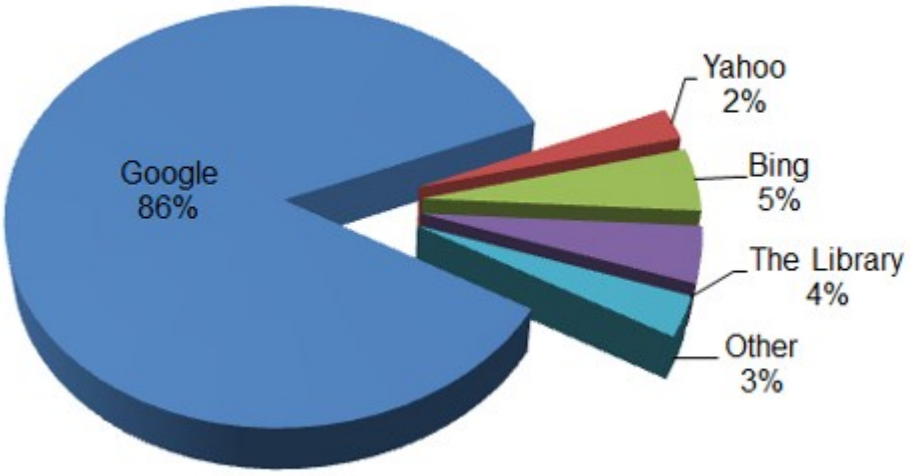
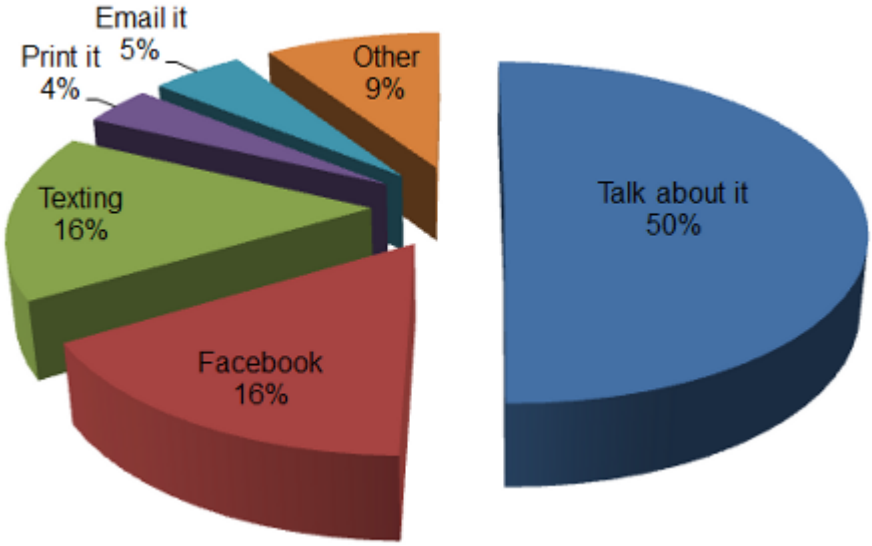
FIGURE 2 — HOW DO YOU SEARCH?



librarians were often met with an awkward silence. However, as librarians probed further into which browsers students used, what kind of mobile phone they had, their experience in high school, and the look of Google in comparison to other search engines, students began connecting not only how their purchases affected where they get their information. Simply put, students talked about liking the look of Google or not knowing what other search engines existed. By asking students inquiry-based questions around their own behavior, librarian were able to learn about their changing preferences, habits, and expectations around information.

The value of this information cannot be understated. One of the great unspoken challenges of working with students is that

FIGURE 3 — HOW DO YOU SHARE INFORMATION?



they change. However, through the data we collected in mobile phone polling we gained a more nuanced understanding of students' information behavior. For example, while we fully expected that students prefer to use Google over other search engines, the discussion that ensued after polling gave us insight into the emotional and situational elements to that preference. Conversely, we were surprised to learn that our students prefer to share information by talking face to face. Librarians expected more reliance on text messaging and Facebook. But students shared their preference for the personal connection when sharing what they learn or sharing what is important to them. This can ultimately impact the way in which we deliver services but also in how we approach and interact with students at reference or in the classroom.

Benefits and Opportunities of Mobile Phone Polling

After conducting polls in over 30 different class sections, anecdotally the librarians observed some of the unique benefits of mobile phone polling. This technology is novel in the classroom. This novelty adds to the excitement for students using the technology; they want to try it out because they have never experienced it before. It is also a very interactive technology. Students use their own phones to update the slides on the screen in real-time. They see their answer reflected in front of the entire class. This mix of novelty and interactivity make this technology effective and fun for both students and librarians. By creating a fun learning environment, librarians are able to elicit a great deal of student engagement with the material and more in-depth thinking about the questions that were asked.

One benefit of this interactive tool is in breaking down expectations that students may have for librarians and library instruction sessions. As Pierard & Graves point out, the impressions that librarians make in a student's first-year class are vital to successful student-librarian interaction for the rest of the students' college career (2002, p. 85). First impressions then are quite important which is why this technology works well in freshman classes. When a librarian walks into a class of first-year students and says something like, "OK, I want you to take out your cell phones and turn them off. I don't want any disruptions or texting in this class," it creates a very different impression than when a librarian says, "OK, I want you to take out your cell phones and turn them ON. We're going to use them in our lesson today." Mobile phones are an integral part of students' lives. By utilizing them in the classroom librarians can meets students where they are. A librarian is seen not as a person who is silencing students, but as someone who is thoughtfully integrating the technology they use into the classroom to create a dynamic and fun lesson.

From a teaching standpoint, mobile polling has several advantages to simply having students raise their hands or answer questions without preparation. Answering an anonymous poll is a much lower barrier to participation. This means that more students are likely to participate, and most students will commit to an answer. Asking students why they chose their responses challenges them to articulate and examine their information habits and preferences. Though answering a multiple choice poll seems basic, by using the right questions, making students commit to an answer, and then having students examine their answers more deeply, instructors can move from just asking a question to a meaningful in-depth conversation about information.

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Another advantage of this technology is its versatility. The students were asked open-ended questions. They didn't need to give "the correct answer" to a question, they merely needed to articulate their own habits and preferences. That led to deeper discussion and examination of those preferences. There are other ways in which this tool can be used as well. It can be used to gauge the level of students' pre-existing knowledge. By polling students at the beginning of class, librarians can adjust their teaching to meet the students' level of expertise. It can also be used for assessment at the end of a class. By structuring questions related to learning outcomes librarians will be able to tell if students understood the lesson and satisfied the learning goals. It can also be used to examine a citation or a website more in depth. Posing a question like "which of these websites is the best," allows students to make judgments and explain their criteria for good websites. Mobile polling would also be useful in student directed learning. By putting up several options about what they would want to learn in the class, or what they feel they need the most help with, you can give students control of their own learning. You could then take the top two or three highest ranked topics and deliver lessons on them. Clearly, this tool easily lends itself to a variety of teaching scenarios.

CHALLENGES AND DRAWBACKS

Mobile phone polling is not without its challenges. The foremost challenge, as with other types of technology, is its potential to fail unexpectedly. Because this technology is web-based it requires an internet connection. If the connection is down or particularly slow this technology will either not work or will update very slowly causing students to lose interest. Therefore, it is necessary to have a backup plan in case problems are encounterd. As mentioned above, the librarians in this instance planned to have students raise their hands or conduct "thumb polls" to respond to poll questions.

Another potential problem is the professor and students' expectations in the classroom. Some instructors ban the use of mobile phones in their classroom to avoid distractions. This can cause mixed messages for students if suddenly the librarian is asking them to take out their phones. It is necessary to clearly communicate ahead of time to professors that students will be asked to use their mobile phones as part of an exercise. This allows professors to prepare their students and make sure they bring their mobile phones to class. Student expectations can often be difficult to manage as well. It was found that some students continued to use their phones after the polling exercise was over, assuming that phone use was now allowed. It is important when giving directions to students to clarify expectations for mobile phone use in the classroom.

Challenging too is when a student does not have a mobile phone in class. Though the overwhelming majority of students own mobile phones it is not the case for everyone. While a rare occurrence, there are other options to allow them to participate. Poll Everywhere allows respondents to answer via computer, tablets, or other web-enabled devices. Librarians could also simply ask students who do not have a phone what they would choose and use that as an opportunity for discussion. By being creative and adaptable, most problems with mobile phone polling can easily be overcome.

CONCLUSION

In teaching numerous sections using mobile phone polling, we have found it to be another excellent tool in our pedagogical toolbox. The Teaching Librarians use a wide variety of teaching tools and activities. Some examples include reflective writing, group work, showing videos, having students use sticky notes on the board, and worksheets. Mobile phone polling is yet another successful way of engaging students if used correctly.

Like any activity or pedagogical tool, it should not be the only one used. Using it sparingly and integrating it thoughtfully will prevent it from becoming stale. The main reason the technology is effective is because it is well known and ubiquitous among students. Virtually every student owns a mobile phone, and texting is their main form of communication. This tool taps into what they are already doing in their everyday lives and meets them where they are.

Using technology in the classroom can be difficult. It can break and fail. It can lead to distraction if misused. Sometimes it is complicated for either students or the instructor. With clickers there are a lot of setup, cost, and logistical issues. On the other hand, mobile phone polling is a cheap, relatively simple technology to setup and use. Creating and displaying polls is easy and it can be implemented anywhere with a web connection. This ease of use paired with its dynamic interactivity makes integrating this technology into the classroom fun and engaging for both students and librarians.

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